

MINUTES OF THE FLOOD CONTROL ADVISORY BOARD

March 22, 2000

The regular monthly meeting of the Flood Control Advisory Board was called to order by Chairman Martin at 2:05 p.m. on Wednesday, March 22, 2000.

Board Members Present: Melvin Martin, Chair; Gilbert Rogers, Vice Chair; Shirley Long, Secretary; Hemant Patel; Paul Cherrington, Ex Officio; Dan Matthews, Ex Officio (for Tom Callow).

Board Members Absent: Tom Callow, Ex Officio.

Staff Members Present: Mike Ellegood, Chief Engineer & General Manager; Julie Lemmon, General Counsel; Tom Johnson, Deputy Chief Engineer/Division Manager; Dick Perreault, CIP/Policy Branch Manager; Bobbie Ohler, Project Manager; Russ Miracle, Planning Branch Manager; Joe Tram, Floodplain Delineation Branch Manager; Tom Renckly, Project Manager; Fred Fuller, Construction Branch Manager; Jim Schwartzmann, PW Land & R/W Division Manager; Joe Munoz, Public Information Officer; Michael Lopez, Civil/Structures Branch Manager; Scott Vogel, Project Manager; Mike Alexander, Planner Management Analyst; Kathy Smith, Clerk of the FCAB; Monica Ortiz, Administrative Coordinator.

Guests Present: Charles Blackwell, Jr.; Liz Clendenin; Deanna Coffman; Jane Cole; Bob Danne; Dave DeWeese, MCDOT; Ray Dovalina, City of Phoenix; Bob Duckworth; Ed Fritz, MCDOT; Brian Fry, Dibble & Assoc.; Simone Gilbert; Richard Gordon, Town of Paradise Valley; David Hann; Joan Horne; Gale Johnson; Spencer Johnson; Derrick Johnson; O'Dell Keil; Ellen Keil; Edward Lowry, Town of Paradise Valley; Tom Martinsen, Town of Paradise Valley; Bud Moore; Bob Moorenan; Bonnie Moorenan; William B. Perkins; Robert W. Plenge, Town of Paradise Valley; Adron Reichert, Holly Acres; Dan Schweiker, Town of Paradise Valley; Virginia Simpson, Town of Paradise Valley; Eugenia Sucher; Mike Sylvain, Brooks, Hersey & Assoc.; Jon White, MCDOT; Kent D. Wick; Ed Winkler, Town of Paradise Valley.

1) Approval of the Minutes of the February 23, 2000 FCAB Meeting.

MR. PATEL MADE A MOTION TO APPROVE THE MINUTES AS SUBMITTED. MR. CHERRINGTON SECONDED THE MOTION AND IT CARRIED UNANIMOUSLY.

Mr. Martin announced that Agenda Item 9, Other Business and Comments from the Public, would be heard at this time.

Julie Lemmon, General Counsel for the Flood Control District, indicated that there was interest from the public in commenting on an item that was noticed and action taken on at our meeting last month. Ms.

Lemmon invited anyone from the audience to make a comment; however, she informed them that the Board, under the Public Meeting Laws, could not discuss, respond or take any action at all except for the items that are on the Agenda noticed for this month. Ms. Lemmon clarified that if they commented on something that is not on the printed Agenda, the Board would listen, but there is not much else they can do.

Joan Horne, Paradise Valley resident: Ms. Horne requested reconsideration of the IGA on the Doubletree project.

Bill Perkins, Paradise Valley resident: Mr. Perkins supported the request for reconsideration of the Doubletree project. He stated that the Councilmembers are the elected representatives of the citizens of the Town and they have worked with staff and the Flood Control District and there has been substantial support for the project.

David Hann, Paradise Valley resident: Mr. Hann, former Mayor of the Town of Paradise Valley, supported reconsideration of the IGA for Doubletree.

Bud Moore, Paradise Valley resident: Mr. Moore stressed the need for this flood control project on Doubletree. The City Council supports the project. He requested reconsideration of this project.

Edward Lowry, Mayor, Paradise Valley: Mr. Lowry urged the Board to reconsider the action taken last month on Doubletree Ranch Road. He stated that this project is very important to the entire area, and that if the Town were to be given the opportunity to present the evidence that the Town Council has listened to for the last year, the Advisory Board would look favorably at this project.

Spencer Johnson, Paradise Valley resident: Mr. Johnson urged the Board to reconsider this project. He stated that it's a good project and he would like to see it on the agenda for next month's meeting.

Bob Danne, Paradise Valley resident: Mr. Danne was very upset with the people opposed to the Doubletree project because he believes they are putting out misinformation on the project. Mr. Danne requested that this issue be reconsidered.

Jane Cole, Paradise Valley resident: Ms. Cole, former Councilmember of the Town of Paradise Valley, urged the Board to stand by their decision to reject this project.

Dan Schweiker, Vice Mayor, Paradise Valley: Mr. Schweiker asked the Board to reconsider and approve the IGA for this project. He stated that the Town Council overwhelmingly supported this project and the residents of the Town support the project.

Ed Winkler, Councilmember, Paradise Valley: Mr. Winkler stated that the Councilmembers must rely on the expertise of staff from the Town and staff from the District to determine what is right for the Town. He is in favor of the project and would like to see it move forward.

Kent Wick, Paradise Valley resident: Mr. Wick, former Mayor of the Town of Paradise Valley, hopes the Board will reconsider this project which will fix the problem they have had for a long time.

Richard Gordon, Town Council, Paradise Valley: Mr. Gordon urged the Board to reconsider their decision on this project. He stated that hundreds of hours have been put into making this decision. The Flood Control District engineers have been under great pressure from the people against the project, yet they've stood strong for this project.

O'Dell Keil, Paradise Valley resident: Mr. Keil indicated his respect for the Town officials. The majority of the residents respect the Town officials and their ability to understand and research issues and they respect their judgement in carrying out decisions that represent what the majority of the Town wants done. Mr. Keil implored the Board to reconsider supporting the improvement of Doubletree Road.

Robert Plenge, Paradise Valley resident: Mr. Plenge, former Mayor of the Town of Paradise Valley, urged the Board to reconsider their decision on this project.

Derrick Johnson, Paradise Valley resident: Mr. Johnson has been involved with this project since the large flood in 1993 which was an eight-year event. He stated that this project would correct the problems to a ten-year event. The Town Council and outside engineers have done detailed analysis

on this project and have shown what needs to be done. The Town of Paradise Valley has bent over backwards to accommodate and listen to a small faction of citizens who are against this project. He emphasized that the Concerned Citizens Club does not represent the majority of the residents.

Eugenia Sucher, Paradise Valley resident: Ms. Sucher urged the Board to stand by the action taken last month on this project.

Bob Duckworth, Paradise Valley resident: Mr. Duckworth would like for the Board to reconsider their decision on this project.

- 2) Intergovernmental Agreement (IGA) FCD 2000A002 among the Flood Control District (District), Maricopa County Department of Transportation (MCDOT) and the City of Mesa for the Ellsworth Channel Project.

Bobbie Ohler, Project Manager, presented this IGA among the District, MCDOT and the City of Mesa for cost sharing, design, rights-of-way acquisition, construction, construction management, and operation and maintenance of the Ellsworth Channel Project.

The project is to design and construct a channel to convey the 100-year flood, starting at Germann Road to the Powerline Floodway. It will be constructed in conjunction with upgrades to Ellsworth Road that MCDOT currently has scheduled for the next few years.

The project cost estimate is \$8 million for the channel part of the project. This District will fund 50%, the City of Mesa will fund 40%, and MCDOT will fund 10%.

The project will include a Channel Alternatives Analysis to make sure we are getting the best alignment and cross-section of our Channel.

Discussion:

Cherrington: How do you prevent flooding on the road if you don't have water passing under the road?

Ohler: A perimeter dike blocks off most of the water so that it comes down Pecos and will be carried into the channel. There will be some box culverts put in to carry the flows through. The road will have drainage pipes every five hundred feet to drain the roadway into the channel.

Martin: Why wouldn't General Motors be made to have a retention area there instead of dumping water off their property onto the main thoroughfare.

Ohler: My guess is that when General Motors and Williams Gateway were first built, there wasn't anyone out there to impact and they were not required to retain their drainage on-site.

Martin: If General Motors is going to come in for building permits, etc., aren't they going to be required to retain their water?

Ellegood: At this juncture, if they were to come in and ask for additional permits and want to develop the land further, we would require additional retention. Because of the pre-existing condition prior to a lot of these regulations being in place, it has been grandfathered.

Martin: Who owns Williams Gateway Airport?

Perreault: The Cities of Gilbert & Mesa and the Gila River Indian Community. When the base closed in 1993, they formed an authority.

MR. PATEL MADE A MOTION TO APPROVE STAFF RECOMMENDATION. MR. CHERRINGTON SECONDED THE MOTION AND IT CARRIED UNANIMOUSLY.

Mike Ellegood prefaced Agenda Items 3 and 4 mentioning the strong emphasis on planning in an effort to get Area Drainage Master Plans and Watercourse Master Plans in place prior to development. Item 4 is an early program to identify potential hazard areas in undeveloped parts of the county in order to be able

to better manage and control development as development is about to occur in these regions. For the last several years, the District has had an extensive planning program, and the Board has seen several of the individual Area Drainage Master Plans. Mike then turned the time over to Russ Miracle to share with the Board his recommended accelerated planning initiative, which will greatly increase the number of Area Drainage Master Plans developed and adopted by the District.

3) Resolution FCD 2000R003 authorizing the Fiscal Year 2000/01 Planning Program.

Russ Miracle, Planning Branch Manager, presented the Fiscal Year 2000/01 Planning Program. The Resolution authorizes the negotiations for technical service contracts for planning studies and to negotiate rights-of-entry for those studies.

The Planning Program is comprised of Area Drainage Master Studies (ADMS), Area Drainage Master Plans (ADMP), Watercourse Master Plans, and Project Specific Master Plans. The ADMS & ADMP studies were initiated in 1985 and have been ongoing annually. In the past, the two studies were separate individual studies, contracted separately. All of the planning work done by the District is contracted services. The District conducts very few of their planning studies internally. The results of the Area Drainage Master Studies are to identify existing flood hazards, including hydrologic modeling, mapping, and floodplain delineation. The Area Drainage Master Plans are alternative plans to fix or mitigate those flood hazards. The Watercourse Master Plans are a fairly recent type of study that the District initiated and deals primarily with the watercourse itself instead of a regional watershed. Project Specific Master Plans are a specific site or project within an Area Drainage Master Plan area.

During FY 2000/01, the recommended program will continue six ADMS/ADMP studies that are currently under way and three new ADMS/ADMP studies, which have been combined into one contract. Combining the new ADMS/ADMP contracts, allows the studies to be completed six months to one year earlier than if they would have been completed separately. The FY 2000/01 program for the Watercourse Master Plans includes continuations of three studies, one new study, and three project specific studies.

Mr. Cherrington asked for clarification on the difference between the Area Drainage Master Plan and the Watercourse Master Plan. He understands the Watercourse Master Plan to be the channel within an Area Drainage Master Plan. Russ responded that that is as good an explanation as he could give. He indicated that when he gets to the map, he will point out specifically where the Watercourse Master Plans are. Within Maricopa County, the District has identified the Watersheds. These areas all drain to a common point. The focus of the Watercourse Master Plan is the channel itself and the overbank floodplain area. The studies evaluate not only the current hydraulic conditions, but also how future development should occur around those areas and the impact, not only on the channel itself, but the downstream areas.

The Project Specific Master Plans are studies of a small geographic area to evaluate the required flood control features and costs for a very specific area rather than a large geographic area which are covered under the Area Drainage Master Plans. There are three studies proposed for next fiscal year.

The Structures Assessment Program, which is on today's agenda for presentation, is an evaluation of the District's existing dams and the encroachment of urban growth around those dams. The Existing Structures Multi-use and Aesthetics Evaluation is a study of all of the District's structures that were built prior to our landscape and aesthetics policy. The District looks at those structures that can be made into multi-use and how they can get someone else to use them for an additional

purpose on behalf of the public, but more importantly, relieve the Flood Control District of the maintenance and liability for owning and operating the structures. The third category is the Project Management Plans. These are reviews of upcoming studies and the determination of what should be included in the study – what is the problem that will be studied, the scope of work, cost and time-frame that the studies should be contracted for. The last type of planning effort is the Candidate Assessment Reports (CAR). A CAR is a quick evaluation of what has been submitted to the District for their CIP program when they feel the information is either dated or incomplete, or when they suspect that the project is something different than what has been requested. The District uses the Candidate Assessment Report as a quick evaluation of existing conditions.

The total amount for all of these studies is \$10,240,000. Staff recommends that the FCAB approve and recommend to the Board of Directors to approve this Resolution.

Discussion:

Martin: Why isn't the Salt River on the map as an outlet?

Miracle: While the District has made considerable expenditures through the Salt River, it really wasn't a Watercourse Master Plan project. It's a previous Flood Control District CIP project, but wasn't a study of this type that we completed.

Ellegood: The Phoenix Rio Salado project, another Rio Salado project and the Tres Rio project would all three, taken as an aggregate, constitute a Watercourse Master Plan. The planning effort has been taken over by events, so there is no real need to go back and restudy them at this point.

Martin: Are you going to study the East Maricopa Floodway?

Ellegood: We are actively studying both the East Maricopa Floodway and the Agua Fria River. The East Maricopa Floodway needs to be studied – we know it's under capacity. When the East Valley further develops, we will need to figure out how to deal with that. The Agua Fria River has not been restudied since the opening of the New Waddell Dam. We've had additional changes in development out there. There is a lot of interest in developing the recreation and habitat restoration components in the area and all those factors combined warranted a restudy of the Agua Fria. We are also proposing to study the Gila River and Queen Creek/Sanokai Wash areas.

Miracle: The Queen Creek/Sanokai Wash and the East Mesa ADMP studies identified some capacity problems in the East Maricopa Floodway and those capacity problems are what is being studied along with the potential for multi-use and aesthetics improvements to the area.

Martin: In the study, are you considering the fact that when that area gets developed, the developers have to retain the water?

Miracle: Yes that is being taken into account. In all of the development that is on-going right now, our designs and capacity analysis on the EMF did take into account the retention that those projects would be required to incorporate in their designs.

Martin: Is there a formula for that?

Miracle: Yes, we use the hydrologic model that the Corps of Engineers developed some years ago to simulate rainfall runoff.

Martin: What is the cost of the three studies?

Miracle: They are estimated at about \$500,000 each.

Martin: What about the six that we have underway now?

Miracle: They are listed individually in your Exhibit A. Keep in mind that these are the projections to complete those studies that are currently underway. What you see is the fiscal year cost for next FY.

Patel: What are the criteria on picking the local study areas? Is it a regional issue?

Miracle: It's based on our customers' request. They were submitted to the CIP Program for prioritization. We evaluated the sites along with the cities.

Patel: Can anything be done internally to complete these studies faster?

Miracle: We've combined the ADMS/ADMP programs and included floodplain delineation studies within those studies under one contract so that we can complete all the information under one contract in a shorter period of time. The amount of money that we are proposing for these studies is quite large. The full intention is to get these studies done so that we can get ahead of development and prevent development from creating more problems so that we don't have to come back and fix a CIP project.

Patel: When you go into these studies, do you dictate a schedule?

Miracle: We do by contract.

Rogers: Do we carry all the expense on these studies?

Miracle: We treat this as cost of doing business. This is 100% Flood Control District effort.

Martin: Have you looked into doing anything aerial or with satellite?

Ellegood: All of these are done using GIS and aerial mapping. We can't get the accuracy today that we need to do definitive work from satellites. We need reasonably accurate aerial mapping. I share your frustration in the length of time it takes to do this. Some of the time constraints are due to process. Russ has been challenged to look at our process to see what we can do to get as much of this done concurrently as we possibly can. These planning projects have major impacts on land use and property values. We've got to have lots of public input, public meetings, etc. By the time we get through this process and share it with the stakeholders, it takes time.

Martin: How does a public hearing have an impact on a study area?

Ellegood: The most classic example is in the work that we are currently doing in Laveen. We were able to bring in all the stakeholders, major property owners, developer interests, MCDOT and City of Phoenix and sit down and lay out all the issues and concerns at one time. This gives us something to operate with so that we know what some of these issues and concerns are. Where the input comes in is the strategies that we use to mitigate where flooding occurs, where do we put retention basins that could perhaps double as a city park, and where can we put drainage channels that can maybe double as a recreation area. Can we work with landowners and other interests along there so that when they begin to develop, land is set aside for flood control purposes or even donated for flood control purposes. This program to date has been very successful in working with the cities that we support.

Cherrington: Of the three proposed ADMP's, you show two of them that require mapping – the Laveen one doesn't. Is there significance to that? Also, the model that you are doing in Laveen, is that going to be the model you use to address the public? I'm curious about when the public gets invited into the process in the future. I hear a lot that people are surprised when their property is suddenly in a floodplain or they didn't even know it was until after it was delineated. Will they be brought in at some stage in the future?

Ellegood: We make extensive efforts to involve the public in early stages. It's a balance that we have to do. There needs to be a proper point in which we involve the public. I'm very impressed with the level of cooperation and excited about the work we've done in Laveen.

MR. PATEL MADE A MOTION TO APPROVE STAFF RECOMMENDATION. MR. CHERRINGTON SECONDED THE MOTION AND IT CARRIED UNANIMOUSLY.

4) Zone "A" Floodplain Delineation Program Planning Initiative.

Mike Ellegood stated that he has challenged Joe Tram and the District to get out even further ahead of development than the deliberate studies that are being done by Russ Miracle and the Planning group. There are many portions of the County, particularly in the western part, that the District believes will be subject to development pressures in the near future before they can have time to develop a thorough plan. The District still needs to delineate floodplains and flood hazard areas in an effort to keep development out of it or to warn a potential builder that they may be building in a flood hazard area.

Joe Tram, Floodplain Delineation Branch Manager, presented the Zone "A" Floodplain Delineation Program Planning Initiative for inclusion into the FY 00/01 budget.

The purpose of the studies are to comply with ARS 48-3609, comply with the National Flood Insurance Program, minimize the loss of life and property, and minimize the need and necessity to mitigate or remediate flood problems. In addition, it's to stay ahead of current and projected population growth.

Based upon the flooding that was occurring in the Valley and Nation-wide, the National Flood Insurance Program was authorized in 1968. It required the publishing of flood insurance studies. In 1989, Congress requested the United States Geological Study to delineate approximate floodplains to expedite the program.

In 1979, the County entered the National Flood Insurance Program and the District adopted two types of floodplain delineations. The District has approximate floodplains for the outlying areas and around the central metro area they have detailed delineations. The USGS map is the base map for the Flood Insurance Programs. The intent of this program, over the next five or so years, is to delineate all the major watercourses as defined by the USGS.

Between 1978 and 1988, the District continued to delineate floodplains. What they did during that time frame was take all the approximate delineations that were done by the Corps of Engineers and converted them into detailed delineations. In addition, the District became very proactive and got a program approved where they were delineating about 100 miles of floodplain per year since 1985. Even at this rate, development is outpacing the District's delineation program.

In 1988, the District made a decision to approach this like they did in 1979 where they would do approximate delineations and get ahead of development and then as development catches up, they could transform them to detailed delineations. The District currently has 18 on-going delineations for various local washes. In addition, they have two approximate delineations and six spillway studies taking place. The two proposed watersheds that they'd like to study are Watersheds OO & RR. They include approximately 700 linear miles of washes and will cost \$1.5 million to delineate. Watershed OO is in the northwest county up at the Jackrabbit Watershed. Watershed RR is between the Towns of Buckeye and Gila Bend.

The program will be based upon the initial Housing and Urban Development Act of 1969 whereby, until detailed floodplain delineations were done, approximate delineations were used for floodplain management. The results will be submitted to FEMA for adoption on the Flood Insurance Rate Maps and they will be used for Area Drainage Master Plans for identification flood hazards, conveyance corridors, and locations of detailed delineations.

Staff recommends that the Advisory Board approve and recommend to the Board of Directors to include the Zone "A" Floodplain Delineation Program in the FY 2000/01 budget.

Discussion:

Rogers: Do you mean that this would give you the right to delineate a floodplain any place you have shown here?

Tram: Right now we are delineating it on the Watershed OO and RR which are up in the Jackrabbit Wash area and the area between Gila Bend & Buckeye.

Rogers: Do you have to bring this to the Board before you can delineate a floodplain?

Tram: Basically we are requesting your approval so that we can budget the funding and go out and delineate these studies. If we get your approval, we put a notification in the paper saying that we have a study and we are proceeding with it. We ask anybody who has any detailed information on flooding to come and participate in the public meeting and present that information. As the study progresses and we generate a result, we have another public meeting for them to review the results. Per the National Flood Insurance Standards, if they have better technical data that can be used to replace our data, then we can incorporate that data into the Flood Insurance Study. If not, then we send our data back to FEMA for inclusion onto our Flood Insurance Rate Maps.

Rogers: Do you have to bring it to the Board to delineate a flood zone?

Ellegood: No we do not because it is contained within the Statutes that provide the Flood Control District with our charter and mission. However, we do need to come to the Board to spend money. We have to delineate these as part of our Statutory Mandates, but we need your authority to spend the money. Frankly, I want this body to know what we are doing in detail, particularly something as broad as this program and the previous program and the subsequent program that you will hear. Whereas I don't have to come to the Board and ask permission to do the study, I want your blessing as we proceed.

Long: I want to commend the foresight of the Flood Control District regarding Agenda Items 3 & 4. I think that it establishes good future trends and can assist, at least in theory, the idea of why the Flood Control District was formed initially. I do hope that with these items on the Agenda, the managing and planning can be expedited so that in the future we don't have to be bogged down with disgruntled citizens for or against.

Rogers: I don't think that we as a Board or we at the Flood Control District give the people notice before they are delineated. That's why I wonder if it shouldn't be mandatory to come to this Board before anything is delineated, then we would know that it has been advertised.

Tram: In the past we have put notifications in the newspaper and in some areas we have gone to the extent of sending a letter to every property owner in the study area. We are making a conscious effort to make people aware of what we are trying to do. They have to recognize what we are doing and the hazards that we are delineating. I'm not adverse to bringing these to the Board or notifying the public because they are either going to talk with me now or they are going to talk with you later. I'd rather have them talk with me now.

Rogers: I make a motion that it has to come to this Board before it's delineated.

Martin: I think we'd have to amend the motion on Item 4 to be on the Agenda. Can we amend the motion for Item 4 and include that motion?

Lemmon: The request is that the Advisory Board wants to hear details on every floodplain delineation that is recommended within Maricopa County before the delineation is adopted and sent to FEMA. Is that a correct statement?

Rogers: Yes.

Lemmon: From a legal perspective, this is something that we may need to bring to another meeting. I would need to do a little research on this. Your Statutes require you to identify and either map yourself as a district or to require the developers to delineate the floodplain. I'm not sure if the developer, if you required that, would have to come to you. You might have an area where you would have part of it done by the District and a piece done by someone else that you didn't see. I'm not sure legally how that will all fit together. I would like to have a chance to look into this from a legal perspective before you adopted such an amended motion. You can amend your motion, if you wish. It seems to be right on target with your mapping program, but I'd like to have a chance to consider this.

Martin: Does somebody want to make a motion that we table Item 4 until the next Agenda?

Ellegood: That would be fine with the District if that is the wishes of the Board.

Patel: I would be interested to know how it would impact your operations if you have to come back to us as an additional step.

Ellegood: I'm not sure what purpose this would serve. In reality, we don't make the floodplain – we are identifying the floodplain. That's what we have to do according to our Statute.

Cherrington: I don't think Shag is trying to stop you from delineating floodplains, I think he is not comfortable with the level of communication that has been made in advance of the delineation of floodplains. To quite simply put it in the paper, we know lots of people who have been impacted by this who never read that article in the paper. I think the concern Shag is expressing is if there is a way of insuring better communication to the affected parties.

Ellegood: I think the discussion is whether or not we should table this. I think we understand a little more the sense of the Board and if we do table it, it will give us the opportunity to come back next month with some answers.

MR. ROGERS MADE A MOTION TO TABLE THIS ITEM TO THE NEXT MEETING. MS. LONG SECONDED THE MOTION AND IT CARRIED UNANIMOUSLY.

5) Flood Control District's Structures Assessment Program.

Mike Ellegood mentioned that Maricopa County is protected largely by twenty-two flood control structures. Many of these structures are nearing the end of their service life. They have suffered some cracking due to subsidence and other kinds of impacts. Land use has changed drastically around the structures since they were initially constructed, and many of the rules have changed over the years as people have gotten smarter about how to construct these kinds of structures. These structures need to be evaluated and, in some cases, may require some extensive repair or replacement.

Tom Renckly, Project Manager, presented this item for information and discussion only.

The District owns, operates and maintains twenty-two flood control dams. The Soil Conservation Service (SCS) built sixteen of these dams; five were built by the Corps of Engineers, and one by the District. The District was the local sponsor for the SCS and Corps' dams. The Arizona Department of Water Resources (ADWR) is the jurisdictional agency for regulating all of the dams.

The five dams built by the Corps of Engineers were constructed between 1956-1985. The dams provide about a 250-year flood protection, which the Corps calls the Standard Project Flood. Flows in excess of the 250-year event discharge through the emergency spillway. Land was acquired in the impoundment area up to that 250-year pool elevation and land was acquired downstream of the emergency spillway to the pre-project 100-year floodplain. All of the Corps structures have a 100-year design life.

The Soil Conservation Service dams were constructed between 1954-1991. These dams provide a 100-year downstream flood protection. Land was acquired or flowage easements have been obtained in the reservoir area up to a 100-year pool elevation. There was no land acquired downstream of the structures. These dams were built primarily to protect agricultural lands. They all have a design life of 50 years.

There have been significant changes since the dams were built. Urbanization has occurred and continues to occur, so the SCS dams that were designed to protect rural areas are now increasingly protecting urbanized areas. Those increased urbanized areas are causing an increase in the hazard classification for some of those dams and will eventually, with the build-out in the valley, become high hazard classifications. There have been changes in the design practices for dams over the years. Subsidence due to groundwater has affected most of the SCS structures. ADWR is revising their Dam Safety Regulations, essentially making them more stringent. The District has reviewed

those regulations and has provided input. The concern to the District is how the Regulations apply to existing dams. By 2025, more than half of the District's dams will have exceeded their design life. Those will all be SCS dams. The greatest impact is on the SCS dams and this is a problem nationwide in scope.

The real purpose of this Structures Assessment Program is for public safety. Specifically, the District wants to minimize risk and the liability associated with the Flood Control District dams. The program consists of three phases. Under Phase I, the District collects and reviews pertinent data on the dams. The District has considerable information on the dams, but are finding that they have data gaps and have to go to ADWR and federal agencies to obtain additional information. The District then does a Dam Safety Inspection, conducts Subsidence Surveys, and performs Risk Assessments. The Risk Assessments will essentially show where the risks are, what the level of risks are, and allow the District to make good management decisions for the solutions and to prioritize those solutions. Then the District prepares a Structures Assessment Report with their recommendations. In addition, the District performs Alternative Analysis Studies to develop solutions to urbanization and dam safety related issues. Structural solutions would possibly modify the dam to correct the deficiencies. Also the District will be looking to replace the dam with a basin, flood channel or a combination of both. The District will also be evaluating project partnering and multi-use opportunities. In addition, the District will always consider non-structural solutions such as new or updated Emergency Action Plans or land acquisition.

Phase II will include performing site specific field investigations and analysis. That will immediately follow Phase I. Phase II will make recommendations for additional analysis. The District will also be performing a more detailed Alternative Analysis and Conceptual Design Studies. These will be very project specific and coming out of Phase II. Again, the District will be looking at structural and non-structural solutions. They will be seeking funding from Federal sponsors and participants in multi-use features. The SCS structures are the ones that the District needs to concentrate on. With those, they are going to seek funding from the Natural Resources Conservation Service (NRCS). The District will be selecting a preferred alternative and then will request specific project authorization.

Under Phase III, the implementation phase, the District will correct the dam safety deficiencies, implement structural and non-structural solutions and continue their in-house Dam Safety Program.

Looking at costs, the District is estimating about \$100,000 per dam for Phase I, totaling about \$2.1 million, which is for 21 dams. Phase I evaluations and studies are ongoing. It is anticipated that the District can complete that in about 18 months. Under Phase II for the site-specific field investigations, the District is looking at about \$150,000 per dam, totaling \$3.2 million. With sufficient funding, they can be completed in about two years. For the second part of Phase II, the District is looking on average of about \$250,000 per dam, totaling \$5.3 million. With sufficient funding the District could probably complete that in about four to six years. The total cost estimate for Phase II is \$8.5 million. Because the project implementation phase has not been determined, the District has made some cost assumptions for Phase III. The majority of the work will be on the SCS dams and the McMicken Dam. If you add up the length of all of those dams, it's about 61 miles. Assuming an average cost of \$1 million to \$4 million per mile of dam, the District is looking at approximately \$61 million to \$244 million potential cost.

Discussion:

Patel: I'd be interested to know what other jurisdictions are doing? Is there something we should be doing with the help of the State to get jurisdictional powers to control development upstream and downstream? It looks like we are going to wind up getting into the dam business – a \$200 million cost with a \$40 million budget doesn't fit.

Renckly: Currently we do not have that regulatory authority. I think some of our options would be to buy land to the top of the dam at the encroachment. We would still have a problem with the downstream situation with respect to the emergency spillway corridors.

Patel: You are talking about massive land areas. Internally, or with our help, perhaps you need to have a work session to come up with some ideas that we could get the BOD to help us out with. I'm sure they are not going to want to spend this kind of money on these structures.

Ellegood: This is a National problem and we anticipate that there will be Federal monies available and potentially substantial Federal monies. I approached the local Corps office about their interest in participating in retrofitting some of these structures, so that opportunity is out there. We are still very early in the process. We need to take a holistic look at this. Many of these, as Tom pointed out, were built out in the desert years ago, primarily to protect agricultural land use. We need to look at what we want in the future and this gives us an opportunity to revisit some of these early things. I think at this point what we need to do is let this program take its course for a year or two until we've finished with some of the Phase I studies and find out where we are in terms of the scope of the problem. We are in the process of revising our floodplain regulations and our drainage regulations to bring them more into alignment with ADWR and their expectations and requirements. They've had several policy changes in recent years, which we need to develop our own standards to reflect. That will give us some additional authority relative to regulating development in the immediate vicinity of these high hazard areas. As individual projects become identified, we'll bring them back to the Board for your funding authorization.

Patel: I think what would help is that we need to go through the Phase I & II studies, but rather than the other studies that we do where automatically there is a project at the end of it, I think that if we look at this thing as a whole and get to the point where we know the magnitude of what we have to take on as a District and then see if we need to have another funding stream and approach it one project at a time.

Ellegood: We clearly cannot bite off \$240 million at one time. Under the best of circumstances, these projects would be done over a period of years so that the expenditure for an individual project could be managed and funded by the District. I have approached OMB with regard to this as a major future effort three to five years from now with the idea that we need to look at the \$45 million funding ceiling that we agreed to three years ago. There are a number of other factors that have changed in the ensuing three years that mean we need to revisit this. In order to do this, we are going to need the support of the Advisory Board. We will probably need an increase in revenue, which will mean that we can no longer continue to drop the secondary tax rate every year as we have for the past three. That's the subject of future discussion with the Advisory Board.

Martin: Is the Corps of Engineers doing a study of some of the dams?

Ellegood: Not at this time. The Corps is involved in their dams to the extent that they do some inspection work.

Renckly: They participate in the inspections. They also participate in reviewing the information that we are providing.

Ellegood: I've talked to Joe Dixon with the local Corps planning staff and asked what the Corps interest would be in looking at the rest of the SCS dams. They expressed that that is a possibility. The point I'm making is that we think there are sources of funds outside the County that can be used to offset some of these significantly potentially high costs.

6) Construction Project Update.

Fred Fuller, Construction Branch Manager, presented slides of current construction projects. This item was for information and discussion only.

Mike Ellegood mentioned that our construction cost growth average has been less than three percent, which is phenomenally low for a public agency such as us. A lot of that can be attributed

to several factors. We've certainly had good plan review, an excellent relationship with all of our contractors and that is largely the work of Fred and his people out there. We've used Value Engineering as a method to take the best ideas of the construction person along with the design person and our own selves to come up with a good set of plans. As you can see, all this work is underground and involves utilities, utility relocations, and sometimes some pretty tricky soil conditions.

- 7) Comments from the Chief Engineer and General Manager. This item was for information only. No action was required.

Mike Ellegood gave each Board member a copy of a letter that he received from the State Land Department relative to Rawhide Wash. He also gave the Board a copy of his response to that letter.

Mike stated that this was a project that three years ago had extraordinary urgency. State Lands, City of Phoenix, and City of Scottsdale all needed it badly and needed it now. The District attempted to enter into a four-way joint venture IGA with them. State Land has not moved forward in a forthright manner to fulfill their part of the IGA. In association with the City of Phoenix, the District and the City of Scottsdale moved forward with a preliminary design. The idea being that by the time that design was completed, the parties involved would have an IGA in place. The City of Phoenix needed to work out an agreement with State Land that would allow for costs to be recovered. Unfortunately, in spite of over two years of discussion, the District and the Cities have gotten nowhere. The gist of Mike's letter was that everyone entered into this with a sense of partnership, everyone has done their job except State Land and that if we want to have this project we need to continue. Right now the project is on hold and nothing will happen on it until the IGA issues can be worked out.

Secondly, Mike stated that he has been requested by a member of the BOD to consider the Doubletree Ranch Road project. He's been asked to place it on the Agenda and subject to Mr. Martin's comments to the contrary, he intends to do that for reconsideration at the next meeting. He understands there may be some other thoughts the Advisory Board may have, and he'd be happy to work through them individually.

Mike mentioned that several staff members have suggested that the District give some of the newer FCAB members a little introduction to how we do some of the things we do and how some of the things happen. He thinks this is a good opportunity to work with and answer questions about how some of our items end up before the Board. The best way to handle this is to schedule something on an individual basis with some of the newer members.

- 8) Summary of Recent Actions by the Board of Directors. This item was for information and discussion only. No action was required.
- 9) Other Business and Comments from the Public. This item was for information and discussion only. No action was required.

Virginia Simpson, Town Council, Paradise Valley: Ms. Simpson urged that the Doubletree project be put back on the Agenda when the Board has time set aside to hear not just from the Councilmembers and former Mayors who represent the Town, but from a number of residents who would like to express how they are effected by this project. Ms. Simpson stated that the Town Council did not come to this decision easily, quickly, or lightly. It's one they agonized over because they wanted to make the right decision. Ms. Simpson stated that the Town Council made what they thought was the best representative decision. Ms. Simpson further mentioned that many

of the people on the “so called” list of petitioners came to the Town Council saying that they didn’t even know what they were signing.

Rogers: Mr. Rogers wanted to know where exactly the Cherokee School is located.

Lemmon: Ms. Lemmon advised that the Board is not allowed to discuss this matter and that perhaps District staff could give him the address after the meeting.

The meeting adjourned at 4:30 p.m. by general consent.

Shirley Long
Secretary of the Board

Kathy Smith
Clerk of the Board